

REMARKS/ARGUMENTS

The Applicants have carefully considered this application in connection with the Examiner's Action and respectfully request reconsideration of this application in view of the following remarks.

The Applicants originally submitted Claims 1-20 in the application. In a previous response to an Examiner's Action, the Applicants canceled Claims 17-20 without prejudice or disclaimer. Presently, the Applicants have amended Claims 1 and 9, and have neither amended, canceled nor added any other claims. Accordingly, Claims 1-16 are currently pending in the application.

I. Rejection of Claims 1 and 9 under 35 U.S.C. §103

The Examiner has rejected Claims 1 and 9 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,546,480 to Burnham, *et al.* (Burnham) in view of U.S. Patent No. 5,708,674 to Beernink, *et al.* (Beernink). Independent Claims 1 and 9, in accordance with the phone conversation between the Examiner and the attorney of record (Mr. Greg H. Parker) on December 22, 2003, have been amended to recite that the barrier region including aluminum be located over the undoped layer and not form a portion of the active region. Neither Burnham nor Beernink teaches or suggests such elements.

In contrast to that claimed, Burnham is directed to an injection laser having quantum size effect transparent waveguiding. (Title) Burnham teaches that the laser includes an active layer 36 located on a lower cladding layer 34, wherein the active layer 36 has an upper cladding layer 41 formed directly thereon. (See FIG. 2 and column 4, lines 20-60). Burnham teaches that the active layer 36 may include an active region 38. In an alternative embodiment, Burnham teaches that the

active layer 36 may comprise multiple quantum well passive regions 36.1. (Column 5, lines 45-48). Burnham further teaches that the device of FIG. 4 is identical to that of FIG. 2, except that the active layer 36 of FIG. 4 comprises the aforementioned quantum well passive regions. These quantum well passive regions, may, according to Burnham, include aluminum therein.

The teachings and suggestions of Burnham are different from that claimed for a number of distinct reasons. Most importantly, however, Burnham fails to teach or suggest a barrier region including aluminum, wherein the barrier region does not form a portion of the active region. The Examiner incorrectly asserts that the aforementioned active layer 36 of Burnham is similar to the barrier region currently claimed in the present invention. To the contrary, the active layer 36 is just what its name suggests. In other words, the active layer 36 is the portion of device configured to create the optical signal, or laser, which is similar in function to the active region claimed in the present invention. Accordingly, the active layer 36 is not acting as a barrier region as the Examiner suggests, but acting as a standard active region configured to create a desired optical signal.

Nevertheless, even if the Examiner fails to agree with the argument set forth above, the so called barrier region including aluminum of Burnham does form a portion of its active layer 36, as its name suggests. The Examiner can not deny this, as the specification of Burnham is quite clear on this point. If Burnham intended the aluminum containing layer(s) (e.g., the active layers) of its device not to form a portion of its active layer or active region, it would not have referred to it as the active layer 36 throughout the entire patent. Therefore, Burnham fails to teach or suggest the claimed element that the barrier region does not form a portion of the active region.

Beernink fails to correct the deficiencies of Burnham. The Examiner is offering Beernink for the sole proposition that the active layer may be situated beneath the barrier layer.

Notwithstanding the accuracy of the Examiner's assertion, a teaching of situating an active layer beneath the barrier layer is far from that which is presently claimed in independent Claims 1 and 9. Accordingly, Beernink also fails to teach or suggest the element that a barrier region including aluminum be located over the undoped layer and not form a portion of the active region.

Thus, Burnham, individually or in combination with Beernink, fails to teach or suggest the invention recited in independent Claims 1 and 9, when considered as a whole. Accordingly, the combination fails to establish a *prima facie* case of obviousness with respect to Claims 1 and 9.

In view of the foregoing remarks, the cited references do not support the Examiner's rejection of Claims 1 and 9 under 35 U.S.C. §103(a). The Applicants therefore respectfully request the Examiner withdraw the rejection.

II. Rejection of Claims 2-8 and 10-16 under 35 U.S.C. §103

The Examiner has rejected Claims 2-8 and 10-16 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,546,480 to Burnham, *et al.* (Burnham) in view of the foreign Patent No. WO 97/50133 to DePoorter (DePoorter). Independent Claims 1 and 9, as indicated above, have been amended to recite that the barrier region including aluminum be located over the undoped layer and not form a portion of the active region. As established above, Burnham fails to teach or suggest these elements.

Similarly, DePoorter fails to teach or suggest these elements. The Examiner is offering DePoorter for the sole proposition that the upper cladding layer may be doped with zinc. Notwithstanding the accuracy of the Examiner's assertion, a teaching of doping an upper cladding layer with zinc is far from that which is presently claimed in independent Claims 1 and 9.

Accordingly, DePoorter also fails to teach or suggest the element that a barrier region including aluminum be located over the undoped layer and not form a portion of the active region.

Thus, Burnham, individually or in combination with DePoorter, fails to teach or suggest the invention recited in independent Claims 1 and 9 and their dependent claims, when considered as a whole. Accordingly, the combination fails to establish a *prima facie* case of obviousness with respect to Claims 1 and 9. Claims 2-8 and 10-16 are therefore not obvious in view of Burnham and DePoorter.

In view of the foregoing remarks, the cited references do not support the Examiner's rejection of Claims 2-8 and 10-16 under 35 U.S.C. §103(a). The Applicants therefore respectfully request the Examiner withdraw the rejection.

III. Rejection of Claims 17-20 under 35 U.S.C. §103

The Examiner has rejected Claims 17-20 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,212,704 to Chen, *et al.* (Chen) in view of Burnham. The Examiner has incorrectly rejected these claims as they were previously canceled without prejudice or disclaimer in the response to the Examiner Action dated October 25, 2002. The Applicants request the Examiner withdraw this rejection in view of this inadvertent error.

IV. Conclusion

In view of the foregoing remarks and amendments, the Applicants now see all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a Notice of Allowance for Claims 1-16.

The Applicants request the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application.

Respectfully submitted,

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